

What is Claimed is:

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1. An image projector comprising:

a lamp for emitting beams of lights;

a color wheel for splitting particular color beams in succession from the beams of lights;

a rod lens for making distribution of the color beams from the color wheel uniform;

a polarized beam converter for converting the color beams into beams of a particular pole;

an optical system for focusing the color beams converted into beams of a particular pole;

a display for producing a picture beam of a video signal according to the video signal by using the color beams from the optical system;

a polarization beam sprite prism between the optical system and the display for reflecting the color beams from the optical system and transmitting the picture beams from the display; and,

a projection lens for enlarging, and projecting the picture beams.

2. An image projector as claimed in claim 1, wherein the light source includes an elliptic reflector for focusing the beams of lights onto a surface in front of the light source.

3. An image projector as claimed in claim 1, wherein the color wheel is a cylindrical color wheel having a plurality of color filters integrated into a cylinder form.

4. An image projector as claimed in claim 3, further comprising a mirror for directing

the color beams split at the cylindrical type color wheel onto the rod lens.

5. An image projector as claimed in claim 1, wherein the color wheel is a disk type color wheel having a plurality of color filters integrated into a disk form.

6. An image projector as claimed in claim 1, wherein the rod lens has an optical input surface with an area equal to, or greater than an optical output surface thereof.

7. An image projector as claimed in claim 1, wherein the polarized beam converter includes;

at least one illumination lens for receiving the color beams from the rod lens and focusing onto a plurality of beam focusing points, and

a polarization beam sprite array for converting the color beams into beams of a particular pole.

8. An image projector as claimed in claim 7, wherein the polarization beam sprite array receives beams inclusive of a P wave and an S wave, and transmitting the S wave and converting the P wave into the S wave and transmitting the converted S wave.

9. An image projector as claimed in claim 7, wherein the polarization beam sprite array receives beams inclusive of a P wave and an S wave, and transmitting the P wave and converting the S wave into a P wave and transmitting the converted P wave.

10. An image projector as claimed in claim 9, further comprising a half wavelength

plate between the polarization beam sprite array and the polarization beam sprite prism for converting the S wave into the P wave, or vice versa.

11. An image projector as claimed in claim 1, wherein the optical system includes at least one illumination lens.

12. An image projector as claimed in claim 1, further comprising a polarizing plate between the optical system and the polarization beam sprite prism for removing noise beams.

13. An image projector as claimed in claim 1, further comprising a 1/4 wavelength plate between the polarization beam sprite prism and the display for preventing a component of polarized beams transmitted through the polarization beam sprite prism from being distorted.

14. An image projector as claimed in claim 1, wherein the display is a reflection type display.

15. An image projector comprising:  
a lamp for emitting beams of lights;  
a color wheel for splitting particular color beams in succession from the beams of lights;  
a rod lens for making distribution of the color beams from the color wheel uniform;  
a polarized beam converter for converting the color beams into beams of a particular

pole;

an optical system for focusing the color beams converted into beams of a particular

pole;

a display for producing a picture beam of a video signal according to the video signal by using the color beams from the optical system; and,

a projection lens for enlarging, and projecting the picture beams.

16. An image projector as claimed in claim 15, wherein the display is a transmission type display.

17. An image projector as claimed in claim 16, wherein the display includes polarizing plates fitted in front and rear of the display.

18. An image projector as claimed in claim 15, further comprising a mirror between the display and the projection lens for directing the picture beams supplied from the display to the projection lens.

19. An image projector as claimed in claim 15, wherein the color wheel is a cylindrical color wheel having a plurality of color filters integrated into a cylinder form.

20. An image projector as claimed in claim 19, further comprising a mirror for directing the color beams split at the cylindrical type color wheel onto the rod lens.

21. An image projector as claimed in claim 15, wherein the color wheel is a disk type

color wheel having a plurality of color filters integrated into a disk form.

22. An image projector as claimed in claim 15, wherein the rod lens has an optical input surface with an area equal to, or greater than an optical output surface thereof.

23. An image projector as claimed in claim 15, wherein the polarized beam converter includes;

at least one illumination lens for receiving the color beams from the rod lens and focusing onto a plurality of beam focusing points, and

a polarization beam sprite array for converting the color beams into beams of a particular pole.

